

IN THE CLAIMS:

Please amend Claims 29 and 31 and add new Claims 69-76 as follows.

1. (Withdrawn) A method of replacing gas in a fuel cell system, comprising the steps of:  
detecting that a fuel cartridge is connected to a fuel cell system comprising a fuel cell;  
and  
supplying a fuel from the fuel cartridge on the basis of the detection to start replacement of gas in the fuel cell system.
2. (Withdrawn) The method according to claim 1, wherein the gas replacement is performed for a predetermined period of time.
3. (Withdrawn) The method according to claim 1, wherein the gas in the fuel cell system is discharged through a purge valve provided in the fuel cell system based on the detection.
4. (Withdrawn) The method according to claim 1, wherein the replacement of the gas in the fuel cell system is performed until an output voltage of the fuel cell becomes a predetermined value or more.
5. (Withdrawn) A method of replacing gas in a fuel cell system, comprising the steps of:  
detecting an output voltage of a fuel cell provided in a fuel cell system; and  
when the output voltage becomes a predetermined value or less, supplying a fuel from a fuel cartridge to start replacement of gas in the fuel cell system.

6. (Withdrawn) The method according to claim 5, wherein the replacement of the gas in the fuel cell system is performed until the output voltage of the fuel cell becomes the predetermined value or more.

7. (Withdrawn) The method according to claim 5, wherein the gas replacement is performed for a predetermined period of time.

8. (Withdrawn) The method according to claim 5, wherein when the output voltage becomes the predetermined value or less, the gas in the fuel cell system is discharged through a purge valve provided in the fuel cell system.

9. (Withdrawn) A method of replacing gas in a fuel cell system, comprising the steps of: detecting an output voltage of a fuel cell provided in a fuel cell system; and when the output voltage becomes a predetermined value or less, supplying a fuel from a fuel tank provided in the fuel cell system to start replacement of gas in the fuel cell system.

10. (Withdrawn) The method according to claim 9, wherein the gas replacement is performed for a predetermined period of time.

11. (Withdrawn) The method according to claim 9, wherein when the output voltage becomes the predetermined value or less, the gas in the fuel cell system is discharged through a purge valve provided in the fuel cell system.

12. (Withdrawn) The method according to claim 9, wherein the replacement of the gas in the fuel cell system is performed until the output voltage of the fuel cell becomes the predetermined value or more.

13. (Withdrawn) A method of replacing gas in a fuel cell system attached to a device, comprising the step of, when a switch of a device to which a fuel cell system is attached is turned on, supplying a fuel from a fuel cartridge to start replacement of gas in the fuel cell system.

14. (Withdrawn) The method according to claim 13, wherein the switch is a main switch of the device.

15. (Withdrawn) The method according to claim 13, wherein the switch is a power source switch of the device.

16. (Withdrawn) The method according to claim 13, wherein the switch is a switch other than a main switch of the device.

17. (Withdrawn) The method according to claim 13, wherein the switch is a switch other than a power source switch of the device.

18. (Withdrawn) The method according to claim 13, wherein the replacement of the gas in the fuel cell system is performed until an output voltage of a fuel cell provided in the fuel cell system becomes a predetermined value or more.

19. (Withdrawn) The method according to claim 13, wherein the gas replacement is performed for a predetermined period of time.

20. (Withdrawn) The method according to claim 13, wherein the gas in the fuel cell system is discharged through a purge valve provided in the fuel cell system.

21. (Withdrawn) A method of replacing gas in a fuel cell system attached to a device, comprising the step of, when a switch of a device to which a fuel cell system is attached is turned on, supplying a fuel from a fuel tank provided in the fuel cell system to start replacement of gas in the fuel cell system.

22. (Withdrawn) The method according to claim 21, wherein the switch is a main switch of the device.

23. (Withdrawn) The method according to claim 21, wherein the switch is a power source switch of the device.

24. (Withdrawn) The method according to claim 21, wherein the switch is a switch other than a main switch of the device.

25. (Withdrawn) The method according to claim 21, wherein the switch is a switch other than a power source switch of the device.

26. (Withdrawn) The method according to claim 21, wherein the replacement of the gas in the fuel cell system is performed until an output voltage of a fuel cell provided in the fuel cell system becomes a predetermined value or more.

27. (Withdrawn) The method according to claim 21, wherein the gas replacement is performed for a predetermined period of time.

28. (Withdrawn) The method according to claim 21, wherein the gas in the fuel cell system is discharged through a purge valve provided in the fuel cell system.

29. (Currently Amended) A fuel cell system, comprising:

a fuel cell;

a connecting part ~~for connecting~~ configured and positioned to connect a fuel cartridge,  
the connecting part including a movable valve-pressing element positioned to abut a valve of the fuel cartridge and movable to a position to press the valve to an open position; and

a signal-producing sensor attached to the connecting part at a position facing and actuated by the fuel cartridge when the fuel cartridge is being connected to the connecting part—~~for detecting that the fuel cell is connected to the connecting part; and~~

a controller connected to the sensor and configured to cause the moving of the movable valve-pressing element to the position to press the valve of the fuel cartridge to the open position in response to the sensor abutting the fuel cartridge, thereby supplying ~~wherein a fuel is supplied from the fuel cartridge connected to the connecting part on the basis of the detection by the sensor~~ to start replacement of gas in the fuel cell system.

30. (Original) The fuel cell system according to claim 29, wherein the gas replacement is performed by a control means provided in a device to which the fuel cell system is attached, on the basis of the detection by the sensor.

31. (Currently Amended) The fuel cell system according to claim 29, ~~wherein further comprising a control means, wherein~~ the control means performs the gas replacement on the basis of the detection by the sensor.

32. (Original) The fuel cell system according to claim 29, wherein the gas replacement is performed for a predetermined period of time.

33. (Original) The fuel cell system according to claim 29, further comprising a purge valve, wherein the purge valve opens on the basis of the detection to discharge gas in the fuel cell system.

34. (Original) The fuel cell system according to claim 29, further comprising a voltage detector for detecting an output voltage of the fuel cell, wherein the gas replacement is performed until the output voltage detected by the voltage detector becomes a predetermined value or more.

35. (Withdrawn) A fuel cell system, comprising:  
a fuel cell;  
a connecting part for connecting a fuel cartridge; and  
a voltage detector for detecting an output voltage of the fuel cell,  
wherein when the output voltage detected by the voltage detector becomes a first predetermined value or less, a fuel is supplied from the fuel cartridge connected to the connecting part to start replacement of gas in the fuel cell system.

36. (Withdrawn) The fuel cell system according to claim 35, wherein the gas replacement is performed by a control means provided in a device to which the fuel cell system is attached, on the basis of the detection by the sensor.

37. (Withdrawn) The fuel cell system according to claim 35, further comprising a control means, wherein the gas replacement is performed by the control means on the basis of the detection by the sensor.

38. (Withdrawn) The fuel cell system according to claim 35, wherein after the start of the gas replacement, the gas replacement is continued until the output voltage of the fuel cell becomes a second predetermined value or more.

39. (Withdrawn) The fuel cell system according to claim 35, wherein the gas replacement is performed for a predetermined period of time.

40. (Withdrawn) The fuel cell system according to claim 35, further comprising a purge valve, wherein the purge valve discharges the gas in the fuel cell system when the output voltage becomes a predetermined value or less.

41. (Withdrawn) A fuel cell system, comprising:  
a fuel cell;  
a fuel tank; and  
a voltage detector for detecting an output voltage of the fuel cell,  
wherein when the output voltage detected by the voltage detector becomes a first predetermined value or less, a fuel is supplied from the fuel tank to start replacement of gas in the fuel cell system.

42. (Withdrawn) The fuel cell system according to claim 41, wherein the gas replacement is performed by a control means provided in a device to which the fuel cell system is attached, on the basis of the detection by the sensor.

43. (Withdrawn) The fuel cell system according to claim 41, further comprising a control means, wherein the gas replacement is performed by the control means on the basis of the detection by the sensor.

44. (Withdrawn) The fuel cell system according to claim 41, wherein after the start of the gas replacement, the gas replacement is continued until the output voltage of the fuel cell becomes a second predetermined value or more.

45. (Withdrawn) The fuel cell system according to claim 41, wherein the gas replacement is performed for a predetermined period of time.

46. (Withdrawn) The fuel cell system according to claim 41, further comprising a purge valve, wherein the purge valve discharges the gas in the fuel cell system when the output voltage becomes a predetermined value or less.

47. (Withdrawn) A device for a fuel cell system, comprising:  
an attaching part for attaching a fuel cell system; and  
a switch provided in the device,  
wherein a fuel is supplied from a fuel cartridge connected to the fuel cell system in response to turn-on of the switch to start replacement of gas in the fuel cell system.

48. (Withdrawn) The device according to claim 47, further comprising a control means, wherein the control means supplies the fuel from the fuel cartridge connected to the fuel cell system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.



49. (Withdrawn) The device according to claim 47, wherein the fuel cell system comprises a control means, and the control means supplies the fuel from the fuel cartridge connected to the fuel cell system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.

50. (Withdrawn) The device according to claim 47, wherein the switch is a main switch of the device.

51. (Withdrawn) The device according to claim 47, wherein the switch is a power source switch of the device.

52. (Withdrawn) The device according to claim 47, wherein the switch is a switch other than a main switch of the device.

53. (Withdrawn) The device according to claim 47, wherein the switch is a switch other than the power source switch of the device.

54. (Withdrawn) A device for a fuel cell system, comprising:  
a fuel cell system comprising a fuel cell and a connecting part for connecting a fuel cartridge; and

a switch provided in the device,  
wherein a fuel is supplied from the fuel cartridge connected to the fuel cell system in response to turn-on of the switch to start replacement of gas in the fuel cell system.

55. (Withdrawn) The device according to claim 54, further comprising a control means, wherein the control means supplies the fuel from the fuel cartridge connected to the fuel cell

system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.

56. (Withdrawn) The device according to claim 54, wherein the fuel cell system further comprises a control means, wherein the control means supplies the fuel from the fuel cartridge connected to the fuel cell system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.

57. (Withdrawn) The device according to claim 54, wherein the switch is a main switch of the device.

58. (Withdrawn) The device according to claim 54, wherein the switch is a power source switch of the device.

59. (Withdrawn) The device according to claim 54, wherein the switch is a switch other than a main switch of the device.

60. (Withdrawn) The device according to claim 54, wherein the switch is a switch other than the power source switch of the device.

61. (Withdrawn) A device for a fuel cell system, comprising:  
a fuel cell system comprising a fuel cell and a fuel tank; and  
a switch provided in the device,  
wherein a fuel is supplied from the fuel tank of the fuel cell system in response to turn-on of the switch to start replacement of gas in the fuel cell system.

62. (Withdrawn) The device according to claim 61, further comprising a control means, wherein the control means supplies the fuel from the fuel tank of the fuel cell system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.

63. (Withdrawn) The device according to claim 61, wherein the fuel cell system further comprises a control means, wherein the control means supplies the fuel from the fuel tank of the fuel cell system on the basis of the turn-on of the switch to start the replacement of the gas in the fuel cell system.

64. (Withdrawn) The device according to claim 61, wherein the switch is a main switch of the device.

65. (Withdrawn) The device according to claim 61, wherein the switch is a power source switch of the device.

66. (Withdrawn) The device according to claim 61, wherein the switch is a switch other than a main switch of the device.

67. (Withdrawn) The device according to claim 61, wherein the switch is a switch other than the power source switch of the device.

68. (New) A fuel cell system, comprising:  
a fuel cell;  
connecting means for connecting a fuel cartridge;  
sensor means for detecting that the fuel cartridge is connected to the connecting means;  
and

means for controlling the fuel cell system to cause a fuel to be supplied from the fuel cartridge connected to the connecting means in response to the sensor means detecting that the fuel cartridge is connected to the connection means to start replacement of gas in the fuel cell system as soon as the fuel cartridge is connected to the connecting means.

69. (New) The fuel cell system according to Claim 29, further comprising a movable diaphragm supporting the valve-pressing element and biasing the valve-pressing element toward the valve with a predetermined pressure.

70. (New) The fuel cell system according to Claim 69,  
further comprising a first casing that houses the connecting part, the sensor, and gas to be consumed by the fuel cell system, and into which the fuel cartridge is removably attached, and  
wherein the diaphragm is movable in response to a change in gas pressure inside the casing when the fuel cartridge is connected to the connecting part, so that the diaphragm moves the valve-pressing element to press the valve to the open position in response to a sufficient quantity of the consumable gas being consumed inside the first casing by the fuel cell system or in response to a sufficient quantity of the consumable gas being discharged outside the fuel cell system.

71. (New) The fuel cell system according to Claim 70, further comprising a second casing supporting the diaphragm and containing gas therein that provides the predetermined pressure on the diaphragm to bias the valve-pressing element toward the valve.

72. (New) The fuel cell system according to Claim 71, further comprising a spring connected to the diaphragm in such a manner as to contribute to the predetermined pressure on the diaphragm to bias the valve-pressing element toward the valve.

73. (New) The fuel cell system according to Claim 29, wherein the sensor comprises a microswitch positioned to be turned on by abutting the valve during the process of the connecting of the fuel cartridge to the connecting part.

74. (New) The fuel cell system according to Claim 73, wherein the microswitch is turned on after an airtight fuel flow path is established between the fuel cell system and the fuel cartridge during the connecting of the connecting part to the fuel cartridge.

75. (New) The fuel cell system according to Claim 74, wherein the connecting part further comprises a fixing element configured to engage a fixing element of the fuel cartridge at the end of the process of connecting the fuel cartridge to the connecting part to fix the fuel cartridge to the fuel cell system, and

wherein the microswitch is turned on before the fuel cartridge is fixed to the fuel cell system, but after the airtight fuel flow path is established between the fuel cell system and the fuel cartridge during the connecting of the connecting part to the fuel cartridge.

76. (New) The fuel cell system according to Claim 73, wherein the valve-pressing element is configured and positioned to be movable in response to a change in gas pressure inside the fuel cell system,

wherein the fuel cell system further comprises a purge valve configured to discharge gas from the fuel cell system in response to an instruction from the controller that is issued when the microswitch is turned on as a result of the abutting the fuel cartridge during the process of the connecting of the fuel cartridge to the connecting part, thereby causing a change in pressure inside the fuel cell system sufficient to press the valve-pressing element against the valve to open the valve.